

1 3. [A3.] The pre-curing apparatus recited in Claim 1 [A1], wherein the preset orientation is  
2 between ninety-one degrees (91°) and one-hundred thirty degrees (130°) to the predetermined  
3 direction.

1 4. [A4.] The pre-curing apparatus recited in Claim 1 [A1], wherein the preset orientation is  
2 between one-hundred thirty degrees (130°) and one-hundred seventy-nine degrees (179°) to the  
3 predetermined direction.

1 5. [A5.] The pre-curing apparatus recited in Claim 1 [A1], wherein a first substrate  
2 holding member is adjoined to the conveyance system at a predetermined distance from a second  
3 substrate holding member, the predetermined distance being based on one of pre-curing time,  
4 conveyance speed, substrate thickness and the preset orientation.

1 6. [A6.] The pre-curing apparatus recited in Claim 1 [A1], wherein a magnitude of the  
2 preset orientation is based on flowing the curable liquid across the surface of the substrate.

1 7. [A7.] The pre-curing apparatus recited in Claim 1 [A1], wherein a magnitude of the  
2 preset orientation is based on one of increasing substrate throughput, decreasing conveyance  
3 system size and decreasing conveyance speed.

1 8. [A8.] The pre-curing apparatus recited in Claim 1 [A1], wherein a magnitude of the  
2 preset orientation is based on one of increasing substrate throughput, decreasing conveyance  
3 system size and decreasing conveyance speed.

1 9. [A9.] The pre-curing apparatus recited in Claim 1 [A1] above, wherein the substrate is  
2 one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 10. [A10.] The pre-curing apparatus recited in Claim 1 [A1] above, wherein the substrate is a  
2 graphic media including at least one graphics image.

1 11. [A11.] The pre-curing apparatus recited in Claim 10 [A10] above, wherein the substrate  
2 is a graphic media is a printable media and the laminate layer is applied to one of the printable  
3 media, graphics image, and printable media and graphics image.

1 12. [A12.] The pre-curing apparatus recited in Claim 1 [A1] above, further comprises:  
2 an enclosure cave, wherein the enclosure cave at least partially encloses a substrate  
3 holding member being conveyed in the predetermined direction.

1 13. [A13.] The pre-curing apparatus recited in Claim 1 [A1] above, wherein the substrate is  
2 preprocessed with an ink-receptive coating.

1 14. [A14.] The pre-curing apparatus recited in Claim 13 [A13] above, wherein the substrate  
2 is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 15. [A15.] The pre-curing apparatus recited in Claim 1 [A1] above, wherein the plurality of  
2 substrate holding members are configured in a preset orientation, the preset orientation askew to  
3 the predetermined direction.

1 16. [A16.] The pre-curing apparatus recited in Claim 1 [A1] above, wherein the substrate  
2 holding members being conveyed in the predetermined direction for a predetermined distance.

1 17. [A17.] The pre-curing apparatus recited in Claim 16 [A16] above, wherein the  
2 predetermined distance is based on an amount of time for the curable liquid to pre-cure on the  
3 surface of the substrate.

1 18. [A18.] The pre-curing apparatus recited in Claim 17 [A17] above, wherein the amount of  
2 time is based on one of thickness of the curable liquid and the preset orientation of the surface of  
3 the substrate.

1 19. [A19.] The pre-curing apparatus recited in Claim 1 [A1] further comprises:  
2 a drip pan for containing residual curable liquid from the surface of the substrate.

1 20. [A20.] The pre-curing apparatus recited in Claim 1 [A1], wherein the conveyance system  
2 is configured with a conveyance portion for conveying a substrate holding members in the  
3 predetermined direction.

1 21. [A21.] The pre-curing apparatus recited in Claim 20 [A20], wherein the predetermined  
2 direction is substantially linear.

1 22. [A22.] The pre-curing apparatus recited in Claim 20 [A20], wherein the conveyance  
2 portion is substantially linear.

1 23. [A23.] The pre-curing apparatus recited in Claim 20 [A20], wherein the conveyance  
2 system is substantially horizontal and the conveyance portion is substantially linear.

1 24. [A24.] The pre-curing apparatus recited in Claim 20 [A20], wherein the predetermined  
2 orientation is near vertical.

1 25. [A25.] The pre-curing apparatus recited in Claim 20 [A20], wherein the conveyance  
2 system is substantially vertical and the conveyance portion is substantially linear.

1 26. [A26.] The pre-curing apparatus recited in Claim 20 [A20], wherein the predetermined  
2 orientation is perpendicular to near vertical.

1 27. [A27.] The pre-curing apparatus recited in Claim 1 [A1], wherein the substrate is  
2 positioned on the forward facing side of the a substrate holding member.

1 28. [A28.] The pre-curing apparatus recited in Claim 20 [A20], wherein the conveyance  
2 system is substantially horizontal and the conveyance portion is substantially horizontal.

1 29. [A29.] The pre-curing apparatus recited in Claim 20 [A20], wherein the conveyance  
2 system is substantially vertical and the conveyance portion is substantially vertical.

1 30. [A30.] The pre-curing apparatus recited in Claim 28 [A28], wherein the substrate is  
2 loaded onto a substrate holding member while the substrate is in a substantially horizontal  
3 orientation prior to the substrate holding member being conveyed to the substantially horizontal  
4 conveyance portion.

1 **31. [B1.]** An apparatus for pre-curing and post-curing a curable liquid applied to a surface  
2 of a substrate comprising:

3 a conveyance system configured with a first conveyance portion for conveying in a first  
4 predetermined direction and further configured with a second conveyance portion for  
5 simultaneously conveying in a second predetermined direction; and

6 a plurality of substrate holding members, each of said substrate holding members being  
7 configured for holding a substrate in a preset orientation, the preset orientation askew to one of  
8 the first and second predetermined directions, wherein one of the plurality substrate holding  
9 members holds a first substrate being conveyed on the first conveyance portion in the first  
10 direction during which the curable liquid applied to the surface of the first substrate is pre-cured  
11 and further wherein another of the plurality substrate holding members holds a second substrate  
12 being conveyed on the second conveyance portion in the second direction during which the  
13 curable liquid applied to the surface of the second substrate is post-cured.

1 **32. [B2.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 ninety-one degrees (91°) and one-hundred seventy-nine degrees (179°) to the first predetermined  
3 direction.

1 **33. [B3.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 ninety-one degrees (91°) and one-hundred thirty degrees (130°) to the first predetermined  
3 direction.

1 **34. [B4.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 one-hundred thirty degrees (130°) and one-hundred seventy-nine degrees (179°) to the first  
3 predetermined direction.

1 **35. [B5.]** The apparatus recited in Claim **31 [B1]**, wherein the first substrate holding  
2 member is adjoined to the conveyance system at a predetermined interval from a third substrate  
3 holding member, the predetermined interval being based on one of pre-curing time, conveyance  
4 speed, substrate thickness and the preset orientation.

1 **36. [B6.]** The apparatus recited in Claim **31 [B1]**, wherein a magnitude of the first preset  
2 orientation is based on flowing the curable liquid across the surface of the first substrate.

1 **37. [B7.]** The apparatus recited in Claim **31 [B1]**, wherein a magnitude of the first preset  
2 orientation is based on one of substrate throughput, conveyance system length and conveyance  
3 speed.

1 **38. [B8.]** The apparatus recited in Claim **31 [B1]** further comprises:  
2 a downloader for downloading a substrate with a post-cured liquid applied to the surface  
3 of the substrate is post-cured.

1 **39. [B9.]** The apparatus recited in Claim **31 [B1]** above, wherein the first substrate is one of  
2 cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene (polythene),  
3 cast polypropylene, oriented polypropylene, cellophane, co-extrusions polyvinylchlorid,  
4 laminated substrates, metallised film and polyester.

1 **40. [B10.]** The apparatus recited in Claim **31 [B1]** above, wherein the first substrate is a  
2 graphic media including at least one graphics image.

1 **41. [B11.]** The apparatus recited in Claim **40 [B10]** above, wherein the first substrate is a  
2 graphic media is a printable media and the laminate layer is applied to one of the printable  
3 media, graphics image, and printable media and graphics image.

1 **42. [B12.]** The apparatus recited in Claim **31 [B1]** above further comprises:  
2 an enclosure cave, wherein the enclosure cave at least partially encloses the first  
3 substrate holding member being conveyed in the first predetermined direction.

1 **43. [B13.]** The apparatus recited in Claim **31 [B1]** above, wherein the first substrate is  
2 preprocessed with an ink-receptive coating.

1 **44. [B14.]** The apparatus recited in Claim **43 [B13]** above, wherein the first substrate is one  
2 of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **45. [B15.]** The apparatus recited in Claim **31 [B1]** above, wherein a third substrate holding  
2 member is configured in a third preset orientation, the third preset orientation askew to the first  
3 predetermined direction.

1 **46. [B16.]** The apparatus recited in Claim **31 [B1]** above, wherein the first conveyance  
2 portion continues in the first predetermined direction for a first predetermined distance.

1 **47. [B17.]** The apparatus recited in Claim **46 [B16]** above, wherein the first predetermined  
2 distance is based on an amount of time for the curable liquid to pre-cure.

1 **48. [B18.]** The apparatus recited in Claim **47 [B17]** above, wherein the amount of time is  
2 based on one of thickness of the curable liquid and the preset orientation of the surface of the  
3 first substrate.

1 **49. [B19.]** The apparatus recited in Claim **31 [B1]** further comprises:  
2 a drip pan for containing residual curable liquid from the surface of the first substrate.

1 **50. [B20.]** The apparatus recited in Claim **31 [B1]**, wherein the conveyance system is  
2 configured with a first conveyance portion for conveying a plurality of substrate holding  
3 members in the first predetermined direction.

1 **51. [B21.]** The apparatus recited in Claim **50 [B20]**, wherein the first predetermined  
2 direction is substantially linear.

1 **52. [B22.]** The apparatus recited in Claim **50 [B20]**, wherein the first conveyance portion is  
2 substantially linear.

1 **53. [B23.]** The apparatus recited in Claim **50 [B20]**, wherein the conveyance system is  
2 substantially horizontal and the first conveyance portion is substantially linear.

1 **54. [B24.]** The apparatus recited in Claim **50 [B20]**, wherein the predetermined orientation is  
2 near vertical.

1 **55. [B25.]** The apparatus recited in Claim **50 [B20]**, wherein the conveyance system is  
2 substantially vertical and the first conveyance portion is substantially linear.

1 **56. [B26.]** The apparatus recited in Claim **50 [B20]**, wherein the predetermined orientation is  
2 perpendicular to near vertical.

1 **57. [B27.]** The apparatus recited in Claim **31 [B1]**, wherein the first substrate is positioned  
2 on the forward facing side of the first substrate holding member.

1 **58. [B28.]** The apparatus recited in Claim **50 [B20]**, wherein the conveyance system is  
2 substantially horizontal and the first conveyance portion is substantially horizontal.

1 **59. [B29.]** The apparatus recited in Claim **50 [B20]**, wherein the conveyance system is  
2 substantially vertical and the first conveyance portion is substantially vertical.

1 **60. [B30.]** The apparatus recited in Claim **58 [B28]**, wherein the substrate is loaded onto a  
2 substrate holding member while the substrate is in a substantially horizontal orientation prior to  
3 the substrate holding member being conveyed to the substantially horizontal first conveyance  
4 portion.

1 **61. [B31.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 ninety-one degrees (91°) and one-hundred seventy-nine degrees (179°) to the second  
3 predetermined direction.

1 **62. [B32.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 ninety-one degrees (91°) and one-hundred seventy-nine degrees (179°) to the first predetermined  
3 direction and to the second predetermined direction.

1 **63. [B33.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 ninety-one degrees (91°) and one-hundred thirty degrees (130°) to the second predetermined  
3 direction.

1 **64. [B34.]** The apparatus recited in Claim **31 [B1]**, wherein the preset orientation is between  
2 one-hundred thirty degrees (130°) and one-hundred seventy-nine degrees (179°) to the second  
3 predetermined direction.

1 **65. [B35.]** The apparatus recited in Claim **31 [B1]**, wherein the second substrate holding  
2 member is adjoined to the conveyance system at a predetermined interval from a third substrate  
3 holding member, the predetermined interval being based on one of post-curing time, conveyance  
4 speed, substrate thickness and temperature.

1 **66. [B36.]** The apparatus recited in Claim **31 [B1]**, wherein a magnitude of the second preset  
2 orientation is based holding the second substrate in the second substrate holding member.

1 **67. [B37.]** The apparatus recited in Claim **31 [B1]**, wherein a magnitude of the second preset  
2 orientation is based on one of substrate throughput, conveyance system length and conveyance  
3 speed.

1 **68. [B38.]** The apparatus recited in Claim **31 [B1]** above further comprises:  
2 an enclosure cave, wherein the enclosure cave at least partially encloses the second  
3 substrate holding member being conveyed in the second predetermined direction.

1 **69. [B39.]** The apparatus recited in Claim **31 [B1]** above, wherein the second substrate is one  
2 of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **70. [B40.]** The apparatus recited in Claim **31 [B1]** above, wherein the second substrate is a  
2 graphic media including at least one graphics image.

1 **71. [B41.]** The apparatus recited in Claim **70 [B40]** above, wherein the second substrate is a  
2 graphic media is a printable media and the laminate layer is applied to one of the printable  
3 media, graphics image, and printable media and graphics image.

1 **72. [B42.]** The apparatus recited in Claim **68 [B38]** further comprises:  
2 an air circulator for circulating air throughout the enclosure cave.

1 **73. [B43.]** The apparatus recited in Claim **31 [B1]** above, wherein the second substrate is  
2 preprocessed with an ink-receptive coating.



1 **74. [B44.]** The apparatus recited in Claim **73 [B43]** above, wherein the second substrate is  
2 one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **75. [B45.]** The apparatus recited in Claim **31 [B1]** above, wherein a third substrate holding  
2 member is configured in a third preset orientation, the third preset orientation askew to the  
3 second predetermined direction.

1 **76. [B46.]** The apparatus recited in Claim **31 [B1]** above, wherein the second conveyance  
2 portion continues in the second predetermined direction for a second predetermined distance.

1 **77. [B47.]** The apparatus recited in Claim **76 [B46]** above, wherein the second  
2 predetermined distance is based on an amount of time for the curable liquid to pre-cure.

1 **78. [B48.]** The apparatus recited in Claim **77 [B47]** above, wherein the amount of time is  
2 based on the temperature of the second substrate.

1 **79. [B49.]** The apparatus recited in Claim **31 [B1]** further comprises:  
2 a downloader for downloading a post-cured substrate.

1 **80. [B50.]** The apparatus recited in Claim **31 [B1]**, wherein the second conveyance portion is  
2 substantially linear.

1 **81. [B51.]** The apparatus recited in Claim **80 [B50]**, wherein the conveyance system is  
2 substantially horizontal and the second conveyance portion is substantially linear.

1 **82. [B52.]** The apparatus recited in Claim **80 [B50]**, wherein the second predetermined  
2 orientation is near vertical.

1 **83. [B53.]** The apparatus recited in Claim **80 [B50]**, wherein the conveyance system is  
2 substantially vertical and the second conveyance portion is substantially linear.

1 **84. [B54.]** The apparatus recited in Claim **80 [B50]**, wherein the predetermined orientation is  
2 perpendicular to near vertical.

1 **85. [B55.]** The apparatus recited in Claim **31 [B1]**, wherein the second substrate is  
2 positioned on the forward facing side of the second substrate holding member.

1 **86. [B56.]** The apparatus recited in Claim **80 [B50]**, wherein the conveyance system is  
2 substantially horizontal and the second conveyance portion is substantially horizontal.

1 **87. [B57.]** The apparatus recited in Claim **80 [B50]**, wherein the conveyance system is  
2 substantially vertical and the second conveyance portion is substantially vertical.

1 **88. [B58.]** The dynamic curing apparatus recited in Claim **31 [B1]** above, wherein one  
2 substrate holding member is substantially parallel with a preceding substrate holding member  
3 while the pair of substrate holding members are being conveyed on the first conveyance portion  
4 in the first direction.

1 **89. [B59.]** The dynamic curing apparatus recited in Claim **31 [B1]** above, wherein one  
2 substrate holding member is substantially parallel with a preceding substrate holding member  
3 while the pair of substrate holding members are being conveyed on the second conveyance  
4 portion in the second direction.

1 **90. [B60.]** The dynamic curing apparatus recited in Claim **31 [B1]** above, wherein the first  
2 direction is substantially opposite to the second direction.

1 **91. [B61.]** The apparatus recited in Claim **31 [B1]** further comprising:  
2 a curing source for emitting energy rays, wherein the energy rays are simultaneously  
3 directed toward the curable liquid on a first surface of a third substrate held in a third substrate  
4 holding member and toward a second surface of a forth substrate held in a forth substrate holding  
5 member, wherein the conveyance system is configured with a third conveyance portion, the third  
6 conveyance portion being a curvilinear conveyance portion, wherein a third substrate holding  
7 member holds the third substrate being conveyed on the third conveyance portion in a third  
8 direction during which the curable liquid applied to a surface of the third substrate is cured.

1 **92. [B62.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 energy rays are simultaneously directed toward the curable liquid on a first surface of a third  
3 substrate held in the third substrate holding member and toward a second surface located on an  
4 opposite side of the third substrate.

1 **93. [B63.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curing source emits energy in the form of one of ultraviolet (UV), infrared (IR), electron  
3 (E-) beam and microwave.

1 **94. [B64.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curing source for emitting energy rays is configurable for directing energy rays in a second  
3 direction.

1 **95. [B65.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 energy rays are directed toward one of the third and forth substrate holding members, thereby  
3 curing residue of the curable liquid contaminating the one of the third and forth substrate holding  
4 members.

1 **96. [B66.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the third  
2 substrate is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte,  
3 polyethylene (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **97. [B67.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the third  
2 substrate is a graphic media including at least one graphics image.

1 **98. [B68.]** The dynamic curing apparatus recited in Claim **97 [B67]** above, wherein the third  
2 substrate is a graphic media is a printable media and the laminate layer is applied to one of the  
3 printable media, graphics image, and printable media and graphics image.

1 **99. [B69.]** The dynamic curing apparatus recited in Claim **98 [B68]** above, wherein the  
2 energy curable liquid laminate is curable by exposure to ultraviolet energy.

1 **100. [B70.]** The dynamic curing apparatus recited in Claim **99 [B69]** above, wherein the third  
2 substrate is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte,  
3 polyethylene (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **101. [B71.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curable liquid is applied to a surface of a substrate at a depth in excess of twenty thousandths of  
3 an inch (20.0 mils.).

1 **102. [B72.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curable liquid is applied to a surface of a substrate at a depth in excess of twenty-five  
3 thousandths of an inch (25.0 mils.).

1 **103. [B73.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curable liquid is applied to a surface of a substrate at a depth in excess of thirty thousandths of an  
3 inch (30.0 mils.).

1 **104. [B74.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curable liquid is applied to a surface of a substrate at a depth in excess of thirty-five thousandths  
3 of an inch (35.0 mils.).

1 **105. [B75.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the third  
2 substrate is preprocessed with an ink-receptive coating.

1 **106. [B76.]** The dynamic curing apparatus recited in Claim **105 [B75]** above, wherein the  
2 third substrate is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte,  
3 polyethylene (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **107. [B77.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein a  
2 substrate holding member maintains the preset orientation relative to the curvilinear direction as  
3 the substrate holding member is conveyed across the curvilinear conveyance portion.

1 **108. [B78.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein a  
2 substrate is transferred from one substrate holding member to a preceding substrate holding  
3 member as the substrate holding member and preceding substrate holding member are conveyed  
4 across the curvilinear conveyance portion.

1 **109. [B79.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein a  
2 substrate is transferred from a forward facing side of one substrate holding member to a rear  
3 facing side of a preceding substrate holding member as the substrate is conveyed across the  
4 curvilinear conveyance portion.

1 **110. [B80.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 conveyance system is configured in a loop with the first conveyance portion above the second  
3 conveyance portion and the third conveyance portion being the curvilinear conveyance portion  
4 connecting to the first conveyance portion and the second conveyance portion.

1 **111. [B81.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein one  
2 substrate holding member is substantially parallel with a preceding substrate holding member  
3 prior to either of the pair of substrate holding members being conveyed across the curvilinear  
4 conveyance portion.

1 **112. [B82.]** The dynamic curing apparatus recited in Claim **111 [B81]** above, wherein one  
2 substrate holding member is askew from a preceding substrate holding member by a  
3 predetermined angle as the pair of substrate holding members are conveyed across the  
4 curvilinear conveyance portion.

1 **113. [B83.]** The dynamic curing apparatus recited in Claim **111 [B81]** above, wherein an  
2 amount of exposure to the energy rays emitted from the curing source by the curable liquid on a  
3 first surface is based on a value of the predetermined angle.

1 **114. [B84.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curing source further comprises:  
3 an ultraviolet (UV) lamp having an arch length greater than a width of the third substrate.

1 **115. [B85.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curing source further comprises:

3 a plurality of ultraviolet (UV) lamps, wherein first energy rays emitted from a first lamp  
4 are directed askew from second energy rays emitted from a second lamp.

1 **116. [B86.]** The dynamic curing apparatus recited in Claim **115 [B85]** above, wherein the first  
2 energy rays emitted from the first lamp are directed toward the curable liquid on a front surface  
3 of the third substrate and second energy rays emitted from the second lamp are directed toward  
4 the rear surface of the forth substrate.

1 **117. [B87.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curing source is a lamp module comprising:

3 an ultraviolet (UV) lamp having an arch length greater than a width of the substrate;  
4 a reflector; and  
5 a cooling mechanism.

1 **118. [B88.]** The dynamic curing apparatus recited in Claim **117 [B87]** above, wherein the  
2 cooling mechanism transfers heat from the lamp module by a heat transfer medium, the heat  
3 transfer medium being one of air and water.

1 **119. [B89.]** The dynamic curing apparatus recited in Claim **91 [B61]** above, wherein the  
2 curvilinear conveyance portion of the conveyance system being substantially configured as an  
3 arc.

1 **120. [B90.]** The dynamic curing apparatus recited in Claim **91 [B61]** above further comprises:  
2 an enclosure hood, wherein the enclosure hood at least partially encloses a substrate  
3 holding member being conveyed in the curvilinear direction.

1 **121. [C1.]** A dynamic curing apparatus for dynamically curing a curable liquid applied to a  
2 surface of a substrate comprising:

3 a conveyance system being configured with curvilinear conveyance portion;

4 a plurality of substrate holding members, each of said substrate holding members being  
5 adjoined to the conveyance system and conveyed across the curvilinear conveyance portion  
6 thereon in a curvilinear direction, wherein each of said substrate holding members is configured  
7 at a preset orientation relative to the curvilinear direction; and

8 a curing source for emitting energy rays, wherein the energy rays are simultaneously  
9 directed toward the curable liquid on a first surface of a first substrate held in a first substrate  
10 holding member and toward a second surface of a second substrate held in a second substrate  
11 holding member.

1 **122. [C2.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 energy rays are simultaneously directed toward the curable liquid on the first surface of a first  
3 substrate held in the first substrate holding member and toward a second surface located on an  
4 opposite side of the first substrate.

1 **123. [C3.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curing source emits energy in the form of one of ultraviolet (UV), infrared (IR), electron (E-)  
3 beam and microwave.

1 **124. [C4.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curing source for emitting energy rays is configurable for directing energy rays in a second  
3 direction.

1 **125. [C5.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 energy rays are directed toward one of the first and second substrate holding member, thereby  
3 curing residue of the curable liquid contaminating the one of the first and second substrate  
4 holding member.

- 1 **126. [C6.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 substrate is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte,  
3 polyethylene (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.
- 1 **127. [C7.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 substrate is a graphic media including at least one graphics image.
- 1 **128. [C8.]** The dynamic curing apparatus recited in Claim **127 [C7]** above, wherein the  
2 substrate is a graphic media is a printable media and the laminate layer is applied to one of the  
3 printable media, graphics image, and printable media and graphics image.
- 1 **129. [C9.]** The dynamic curing apparatus recited in Claim **128 [C8]** above, wherein the  
2 energy curable liquid laminate is curable by exposure to ultraviolet energy.
- 1 **130. [C10.]** The dynamic curing apparatus recited in Claim **129 [C9]** above, wherein the  
2 substrate is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte,  
3 polyethylene (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.
- 1 **131. [C11.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curable liquid applied to a surface of a substrate at a depth in excess of twenty thousandths of an  
3 inch (20.0 mils.).
- 1 **132. [C12.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curable liquid applied to a surface of a substrate at a depth in excess of twenty-five thousandths  
3 of an inch (25.0 mils.).
- 1 **133. [C13.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curable liquid applied to a surface of a substrate at a depth in excess of thirty thousandths of an  
3 inch (30.0 mils.).



1 **134. [C14.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curable liquid applied to a surface of a substrate at a depth in excess of thirty-five thousandths of  
3 an inch (35.0 mils.).

1 **135. [C15.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 substrate is preprocessed with an ink-receptive coating.

1 **136. [C16.]** The dynamic curing apparatus recited in Claim **135 [C15]** above, wherein the  
2 substrate is one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte,  
3 polyethylene (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **137. [C17.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein a  
2 substrate holding member maintains the preset orientation relative to the curvilinear direction as  
3 the substrate holding member is conveyed across the curvilinear conveyance portion.

1 **138. [C18.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein a  
2 substrate is transferred from one substrate holding member to a preceding substrate holding  
3 member as the substrate holding member and preceding substrate holding member are conveyed  
4 across the curvilinear conveyance portion.

1 **139. [C19.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein a  
2 substrate is transferred from a forward facing side of one substrate holding member to a rear  
3 facing side of a preceding substrate holding member as the substrate is conveyed across the  
4 curvilinear conveyance portion.

1 **140. [C20.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein a  
2 substrate falls from a forward facing side of one substrate holding member to a rear facing side  
3 of a preceding substrate holding member as the substrate is conveyed across the curvilinear  
4 conveyance portion.

1 **141. [C21.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein one  
2 substrate holding member is substantially parallel with a preceding substrate holding member  
3 prior to either of the pair of substrate holding members being conveyed across the curvilinear  
4 conveyance portion.

1 **142. [C22.]** The dynamic curing apparatus recited in Claim **141 [C21]** above, wherein one  
2 substrate holding member is askew from a preceding substrate holding member by a  
3 predetermined angle as the pair of substrate holding members are conveyed across the  
4 curvilinear conveyance portion.

1 **143. [C23.]** The dynamic curing apparatus recited in Claim **141 [C21]** above, wherein an  
2 amount of exposure to the energy rays emitted from the curing source by the curable liquid on a  
3 first surface is based on a value of the predetermined angle.

1 **144. [C24.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curing source further comprises:  
3 an ultraviolet (UV) lamp having an arch length greater than a width of the substrate.

1 **145. [C25.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curing source further comprises:  
3 a plurality of ultraviolet (UV) lamps, wherein first energy rays emitted from a first lamp  
4 are directed askew from second energy rays emitted from a second lamp.

1 **146. [C26.]** The dynamic curing apparatus recited in Claim **145 [C25]** above, wherein the first  
2 energy rays emitted from the first lamp are directed toward the curable liquid on a front surface  
3 of the first substrate and second energy rays emitted from the second lamp are directed toward  
4 the rear surface of the second substrate.

1 **147. [C27.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curing source is a lamp module comprising:  
3 an ultraviolet (UV) lamp having an arch length greater than a width of the substrate;  
4 a reflector; and  
5 a cooling mechanism.

1 **148. [C28.]** The dynamic curing apparatus recited in Claim **147 [C27]** above, wherein the  
2 cooling mechanism transfers heat from the lamp module by a heat transfer medium, the heat  
3 transfer medium being one of air and water.

1 **149. [C29.]** The dynamic curing apparatus recited in Claim **121 [C1]** above, wherein the  
2 curvilinear conveyance portion of the conveyance system being substantially configured as an  
3 arc.

1 **150. [C30.]** The dynamic curing apparatus recited in Claim **121 [C1]** above further comprises:  
2 an enclosure hood, wherein the enclosure hood at least partially encloses a substrate  
3 holding member being conveyed in the curvilinear direction.

1 **151. [D1.]** A method for pre-curing a curable liquid applied to a surface of a substrate, the  
2 method employing a pre-curing apparatus having a conveyance system and a plurality of  
3 substrate holding members, each of said plurality of substrate holding members being adjoined to  
4 the conveyance system and conveyed, the method comprising:  
5 applying a curable liquid to a surface of a substrate;  
6 receiving the substrate on a substrate holding member, wherein the substrate holding  
7 member is one of the plurality substrate holding members;  
8 reorienting the substrate holding member to a predetermined orientation;  
9 conveying the plurality substrate holding members on the conveyance system in a  
10 predetermined direction; and  
11 pre-curing the curable liquid.

1 **152. [D2.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]** further  
2 comprises:  
3 wherein the predetermined orientation is between ninety-one degrees (91°) and one-  
4 hundred seventy-nine degrees (179°) to the predetermined direction.

1 **153. [D3.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein the  
2 predetermined orientation is between ninety-one degrees (91°) and one-hundred thirty degrees  
3 (130°) to the predetermined direction.

1 **154. [D4.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein the  
2 predetermined orientation is between one-hundred thirty degrees (130°) and one-hundred  
3 seventy-nine degrees (179°) to the predetermined direction.

1 **155. [D5.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein the  
2 substrate is a first substrate and the substrate holding member is a first substrate holding member,  
3 the method further comprises:

4 applying a curable liquid to a surface of a second substrate;

5 receiving the second substrate on a second substrate holding member, wherein the second  
6 substrate holding member is another of the plurality substrate holding members and the second  
7 substrate holding member is adjoined to the conveyance system at a predetermined distance from  
8 the first substrate holding member, the predetermined distance being based on one of pre-curing  
9 time, conveyance speed, substrate thickness and the predetermined orientation;

10 reorienting the second substrate holding member to the predetermined orientation; and

11 pre-curing the curable liquid applied to the surface of the second substrate holding  
12 member.

1 **156. [D6.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein a  
2 magnitude of the preset orientation is based on flowing the curable liquid across the surface of  
3 the substrate.

1 **157. [D7.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:

3 screening the curable liquid laminate is applied to the surface of the substrate.

1 **158. [D8.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:

3 jetting the curable liquid laminate is applied to the surface of the substrate.

1 **159. [D9.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:

3 measuring the curable liquid laminate is applied to the surface of the substrate to a depth  
4 in excess of twenty thousandths of an inch (20.0 mils.).

1 **160. [D10.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:  
3 measuring the curable liquid laminate is applied to the surface of the substrate to a depth  
4 in excess of twenty-five thousandths of an inch (25.0 mils.).

1 **161. [D11.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:  
3 measuring the curable liquid laminate is applied to the surface of the substrate to a depth  
4 in excess of thirty thousandths of an inch (30.0 mils.).

1 **162. [D12.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:  
3 measuring the curable liquid laminate is applied to the surface of the substrate to a depth  
4 in excess of thirty-five thousandths of an inch (35.0 mils.).

1 **163. [D13.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:  
3 measuring the curable liquid laminate is applied to the surface of the substrate to a depth  
4 in excess of thirty-five thousandths of an inch (35.0 mils.).

1 **164. [D14.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein  
2 prior to applying a curable liquid to a surface of a substrate the method further comprises:  
3 combining silicon with the curable liquid.

1 **165. [D15.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]** above,  
2 further comprises:  
3 at least partially shielding a substrate holding member being conveyed in the  
4 predetermined direction from airborne particulate matter and latent ultraviolet radiation.

1 **166. [D16.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]** above,  
2 wherein conveying the plurality substrate holding members on the conveyance system in a  
3 predetermined direction further comprises:

4       conveying the plurality substrate holding members in the predetermined direction for a  
5 predetermined distance.

1 **167. [D17.]** The method for pre-curing a curable liquid recited in Claim **166 [D16]** above,  
2 wherein the predetermined distance is based on an amount of time for the curable liquid to pre-  
3 cure on the surface of the substrate.

1 **168. [D18.]** The method for pre-curing a curable liquid recited in Claim **167 [D17]** above,  
2 wherein the amount of time is based on one of thickness of the curable liquid and the  
3 predetermined orientation of the surface of the substrate.

1 **169. [D19.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]** further  
2 comprises:  
3       containing residual curable liquid flowing from the surface of the substrate.

1 **170. [D20.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein the  
2 predetermined direction is substantially linear.

1 **171. [D21.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein the  
2 conveyance system is substantially horizontal, conveying the plurality substrate holding  
3 members on the conveyance system in a predetermined direction further comprises:  
4       conveying the plurality substrate holding members in a substantially horizontal direction.

1 **172. [D22.]** The method for pre-curing a curable liquid recited in Claim **171 [D21]**, wherein  
2 the predetermined orientation is near vertical.

1 **173. [D23.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]**, wherein the  
2 conveyance system is substantially vertical, conveying the plurality substrate holding members  
3 on the conveyance system in a predetermined direction further comprises:  
4       conveying the plurality substrate holding members in a substantially vertical direction.

1 **174. [D24.]** The method for pre-curing a curable liquid recited in Claim **173 [D23]**, wherein  
2 the predetermined orientation is near horizontal.

1 **175. [D24.]** The method for pre-curing a curable liquid recited in Claim **151 [D1]** further  
2 comprises:

3 curing the substrate;

4 applying a curable liquid to another surface of the substrate;

5 receiving the substrate on a substrate holding member, wherein the substrate holding  
6 member is one of the plurality substrate holding members;

7 reorienting the substrate holding member to a predetermined orientation;

8 conveying the plurality substrate holding members on the conveyance system in a  
9 predetermined direction; and

10 pre-curing the curable liquid on the other surface of the substrate.

1 **176. [D25.]** The method for pre-curing a curable liquid recited in Claim **175 [D24]** further  
2 comprises:

3 wherein the predetermined orientation is between ninety-one degrees (91°) and one-  
4 hundred seventy-nine degrees (179°) to the predetermined direction.

1 **177. [D26.]** The method for pre-curing a curable liquid recited in Claim **175 [D24]**, wherein  
2 the predetermined orientation is between ninety-one degrees (91°) and one-hundred thirty  
3 degrees (130°) to the predetermined direction.

1 **178. [D27.]** The method for pre-curing a curable liquid recited in Claim **175 [D24]**, wherein  
2 the predetermined orientation is between one-hundred thirty degrees (130°) and one-hundred  
3 seventy-nine degrees (179°) to the predetermined direction.

1 **179. [D28.]** The method for pre-curing a curable liquid recited in Claim **175 [D24]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:

3 screening the curable liquid laminate is applied to the surface of the substrate.

1 **180. [D29.]** The method for pre-curing a curable liquid recited in Claim **175 [D24]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:  
3 jetting the curable liquid laminate is applied to the surface of the substrate.

1 **181. [D30.]** The method for pre-curing a curable liquid recited in Claim **175 [D24]**, wherein  
2 applying a curable liquid to a surface of a substrate further comprises:  
3 measuring the curable liquid laminate is applied to the surface of the substrate to a depth  
4 of less than twelve thousandths of an inch (12.0 mils.).

1 **182. [E1.]** A method for laminating a substrate with a curable liquid laminate applied to a  
2 surface of a substrate employing a wicket conveyor system, the wicket conveyor system being  
3 configured with a first conveyor portion for conveying in a first predetermined direction and  
4 configured with a second conveyor portion for conveying in a second predetermined direction  
5 and further with a third conveyor portion for conveying in a curvilinear direction between the  
6 first conveyor portion and the second conveyor portion and the wicket conveyor system further  
7 being configured with a plurality of wickets being adjoined to one of the first, second and third  
8 wicket conveyor portions, the method comprising:  
9 applying a curable liquid laminate to a surface of a substrate;  
10 receiving the substrate on to a wicket;  
11 conveying the wicket on the first conveyor portion and in the first predetermined  
12 direction, wherein the curable liquid laminate is pre-cured along first predetermined direction.

1 **183. [E2.]** The method for laminating a substrate using a wicket conveyor system recited in  
2 Claim **182 [E1]** above further comprises:  
3 conveying the wicket on the third conveyor portion and in the curvilinear direction,  
4 wherein the curable liquid laminate is cured along curvilinear direction.

1 **184. [E3.]** The method for laminating a substrate using a wicket conveyor system recited in  
2 Claim **183 [E2]** above further comprises:  
3 conveying the wicket on the second conveyor portion and in the second predetermined  
4 direction, wherein the curable liquid laminate is post-cured along second predetermined  
5 direction.



1 **185. [F1.]** An automated method for created high gloss laminated substrate surface  
2 comprising:  
3 metering a coating of an energy curable liquid laminate to a surface of a substrate, the  
4 coating being metered to a depth of greater than twelve thousandths of an inch (12.0 mils.);  
5 transferring the coated substrate to one of a plurality of substrate holding members, each  
6 of the plurality of substrate holding members being adjoined to a conveyance system, wherein  
7 the one of a plurality of substrate holding members is conveyed in a predetermined direction; and  
8 conveying the substrate having the energy curable liquid laminated surface on the  
9 conveyance system in a predetermined direction, wherein the one of a plurality of substrate  
10 holding members substrate holding member is configured for holding the liquid laminated  
11 substrate in a preset orientation, the preset orientation askew to the second predetermined  
12 direction.

1 **186. [F2.]** The method for pre-curing a curable liquid recited in Claim **185 [F1]** further  
2 comprises:  
3 wherein the predetermined orientation is between ninety-one degrees (91°) and one-  
4 hundred seventy-nine degrees (179°) to the predetermined direction.[.]

1 **187. [F3.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein the predetermined orientation is between ninety-one degrees (91°)  
3 and one-hundred thirty degrees (130°) to the predetermined direction.

1 **188. [F4.]** The method for pre-curing a curable liquid recited in Claim **185 [F1]**, wherein the  
2 predetermined orientation is between one-hundred thirty degrees (130°) and one-hundred  
3 seventy-nine degrees (179°) to the predetermined direction.

1 **189. [F5.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]** further comprises:  
3 curing the energy curable liquid laminate on the surface of the substrate.

1 **190. [F6.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein a magnitude of the preset orientation is based on flowing the energy  
3 curable liquid laminate across the surface of the substrate.

1 **191. [F7.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 screening the energy curable liquid laminate is applied to the surface of the substrate.

1 **192. [F8.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 jetting the energy curable liquid laminate is applied to the surface of the substrate.

1 **193. [F9.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 measuring the energy curable liquid laminate is applied to the surface of the substrate to a  
5 depth in excess of twenty thousandths of an inch (20.0 mils.).

1 **194. [F10.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 measuring the energy curable liquid laminate is applied to the surface of the substrate to a  
5 depth in excess of twenty-five thousandths of an inch (25.0 mils.).

1 **195. [F11.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 measuring the energy curable liquid laminate is applied to the surface of the substrate to a  
5 depth in excess of thirty thousandths of an inch (30.0 mils.).

1 **196. [F12.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 measuring the energy curable liquid laminate is applied to the surface of the substrate to a  
5 depth in excess of thirty-five thousandths of an inch (35.0 mils.).

1 **197. [F13.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein metering a coating of an energy curable liquid laminate to a surface  
3 of a substrate further comprises:

4 measuring the energy curable liquid laminate is applied to the surface of the substrate to a  
5 depth in excess of thirty-five thousandths of an inch (35.0 mils.).

1 **198. [F14.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein prior to metering the coating of an energy curable liquid laminate to  
3 a surface of a substrate further comprises: the method further comprises:

4 combining silicon with the curable liquid.

1 **199. [F15.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]** above, further comprises:

3 curing the substrate; and

4 downloading the substrate from the conveyance system.

1 **200. [F16.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]** above, wherein conveying the substrate having the energy curable liquid  
3 laminated surface on the conveyance system in a predetermined direction, further comprises:

4 conveying the plurality substrate holding members in the predetermined direction for a  
5 predetermined distance.

1 **201. [F17.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **200 [F16]** above, wherein the predetermined distance is based on an amount of time for  
3 the energy curable liquid laminate to pre-cure on the surface of the substrate.

1 **202. [F18.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **201 [F17]** above, wherein the amount of time is based on one of thickness of the energy  
3 curable liquid laminate and the predetermined orientation of the surface of the substrate.

1 **203. [F19.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]** further comprises:

3 containing residual energy curable liquid laminate flowing from the surface of the  
4 substrate.

1 **204. [F20.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein the predetermined direction is substantially linear.

1 **205. [F21.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein the conveyance system is substantially horizontal, conveying the  
3 plurality substrate holding members on the conveyance system in a predetermined direction  
4 further comprises:

5 conveying the plurality substrate holding members in a substantially horizontal direction.

1 **206. [F22.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **205 [F21]**, wherein the predetermined orientation is near vertical.

1 **207. [F23.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]**, wherein the conveyance system is substantially vertical, conveying the  
3 plurality substrate holding members on the conveyance system in a predetermined direction  
4 further comprises:

5 conveying the plurality substrate holding members in a substantially vertical direction.

1 **208. [F24.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **207 [F23]**, wherein the predetermined orientation is near horizontal.

1 **209. [F24.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **185 [F1]** further comprises:

3 curing the substrate;

4 metering a coating of an energy curable liquid laminate to another surface of the  
5 substrate, the coating being metered to a depth of less than twelve thousandths of an inch (12.0  
6 mils.);

7 transferring the other coated substrate to one of a plurality of substrate holding members,  
8 each of the plurality of substrate holding members being adjoined to a conveyance system,  
9 wherein the one of a plurality of substrate holding members is conveyed in a predetermined  
10 direction; and

11 conveying the other substrate having the energy curable liquid laminated surface on the  
12 conveyance system in a predetermined direction, wherein the one of a plurality of substrate  
13 holding members substrate holding member is configured for holding the liquid laminated  
14 substrate in a preset orientation, the preset orientation askew to the second predetermined  
15 direction.

1 **210. [F25.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **209 [F24]** further comprises:

3 wherein the predetermined orientation is between ninety-one degrees (91°) and one-  
4 hundred seventy-nine degrees (179°) to the predetermined direction.

1 **211. [F26.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **209 [F24]**, wherein the predetermined orientation is between ninety-one degrees (91°)  
3 and one-hundred thirty degrees (130°) to the predetermined direction.

1 **212. [F27.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **209 [F24]**, wherein the predetermined orientation is between one-hundred thirty  
3 degrees (130°) and one-hundred seventy-nine degrees (179°) to the predetermined direction.

1 **213. [F28.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **209 [F24]**, wherein applying a curable liquid to a surface of a substrate further  
3 comprises:

4 screening the energy curable liquid laminate is applied to the surface of the substrate.

1 **214. [F29.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **209 [F24]**, wherein applying a curable liquid to a surface of a substrate further  
3 comprises:

4 jetting the energy curable liquid laminate is applied to the surface of the substrate.

1 **215. [F30.]** The automated method for created high gloss laminated substrate surface recited  
2 in Claim **209 [F24]** further comprising:

3 curing the energy curable liquid laminate on the surface of the other substrate.

1 **216. [G1.]** A laminated product formed using a sheet flow lamination process comprising  
2 coating a surface with an energy curable liquid laminate, orienting the coated surface such that  
3 the coated surface is at an angle greater than forty-five degrees (45°) from horizontal thereby  
4 flowing the energy curable liquid laminate across the surface and curing the liquid laminate, the  
5 laminated product comprising:

6 a substrate; and

7 a laminate layer formed from the energy curable liquid laminate, wherein the laminate  
8 layer has a depth in excess of twelve thousandths of an inch (12.0 mils.) and further wherein a  
9 surface of the laminate layer has a gloss level in excess of ninety-seven (97.0) gloss units  
10 measured at sixty degrees (60°).

1 **217. [G2.]** The laminated product recited in Claim **216 [G1]** above, wherein the energy  
2 curable liquid laminate is curable by exposure to ultraviolet energy.

1 **218. [G3.]** The laminated product recited in Claim **216 [G1]** above, wherein the substrate is  
2 one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **219. [G4.]** The laminated product recited in Claim **216 [G1]** above, wherein the substrate is a  
2 graphic media including at least one graphics image.

1 **220. [G5.]** The laminated product recited in Claim **219 [G4]** above, wherein the substrate is a  
2 graphic media is a printable media and the laminate layer is applied to one of the printable  
3 media, graphics image, and printable media and graphics image.

1 **221. [G6.]** The laminated product recited in Claim **220 [G5]** above, wherein the energy  
2 curable liquid laminate is curable by exposure to ultraviolet energy.

1 **222. [G7.]** The laminated product recited in Claim **221 [G6]** above, wherein the substrate is  
2 one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **223. [G8.]** The laminated product recited in Claim **221 [G6]** above, wherein the energy  
2 curable liquid laminate is applied to a surface of the substrate using one of screen application, jet  
3 application and roller application.

1 **224. [G9.]** The laminated product recited in Claim **216 [G1]** above, wherein the laminate  
2 layer has a depth in excess of twenty thousandths of an inch (20.0 mils.).

1 **225. [G10.]** The laminated product recited in Claim **216 [G1]** above, wherein the laminate  
2 layer has a depth in excess of twenty-five thousandths of an inch (25.0 mils.).

1 **226. [G11.]** The laminated product recited in Claim **216 [G1]** above, wherein the laminate  
2 layer has a depth in excess of thirty thousandths of an inch (30.0 mils.).

1 **227. [G12.]** The laminated product recited in Claim **216 [G1]** above, wherein the laminate  
2 layer has a depth in excess of thirty-five thousandths of an inch (35.0 mils.).

1 **228. [G13.]** The laminated product recited in Claim **216 [G1]** above, wherein the surface of  
2 the laminate layer has a gloss level in excess of one hundred (100.0) gloss units measured at  
3 sixty degrees (60°).

1 **229. [G14.]** The laminated product recited in Claim **216 [G1]** above, wherein the surface of  
2 the laminate layer has a gloss level in excess of one hundred five (105.0) gloss units measured at  
3 sixty degrees (60°).

1 **230. [G15.]** The laminated product recited in Claim **216 [G1]** above, wherein the surface of  
2 the laminate layer has a gloss level in excess of one hundred ten (110.0) gloss units measured at  
3 sixty degrees (60°).

1 **231. [G16.]** The laminated product recited in Claim **216 [G1]** above, wherein the surface of  
2 the laminate layer has a gloss level in excess of one hundred fifteen (115.0) gloss units measured  
3 at sixty degrees (60°).

1 **232. [G17.]** The laminated product recited in Claim **216 [G1]** above, wherein the laminate  
2 layer further includes silicon added to the energy curable liquid laminate prior to curing the  
3 energy curable liquid laminate.

1 **233. [G18.]** The laminated product recited in Claim **216 [G1]** above, wherein the substrate is  
2 preprocessed with an ink-receptive coating.

1 **234. [G19.]** The laminated product recited in Claim **233 [G18]** above, wherein the substrate is  
2 one of cellulose-based pulp paper, cotton-based pulp paper, cardboard, matte, polyethylene  
3 (polythene), cast polypropylene, oriented polypropylene, cellophane, co-extrusions  
4 polyvinylchlorid, laminated substrates, metallised film and polyester.

1 **235. [G20.]** The laminated product recited in Claim **216 [G1]** above, wherein the surface of  
2 the substrate laminated using the sheet flow lamination process has a gloss level value at least  
3 five (5.0) gloss units higher than an identical substrate laminated with an identical energy curable  
4 liquid laminate not using the sheet flow lamination process.